



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/966,557	09/27/2001	Richard Charles Allen	55871US002	4597
32692	7590	05/04/2005	EXAMINER	
3M INNOVATIVE PROPERTIES COMPANY			PRITCHETT, JOSHUA L	
PO BOX 33427			ART UNIT	
ST. PAUL, MN 55133-3427			PAPER NUMBER	
			2872	

DATE MAILED: 05/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/966,557

Applicant(s)

ALLEN ET AL.

Examiner

Joshua L. Pritchett

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

This action is in response to Amendment after non-final rejection filed February 10, 2005. All applicants arguments have been considered.

#### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 6-12, and 18-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shingaki et al. (EP 0487047 A2) in view of Bailey (2,285,792).

Shingaki et al. disclose (see Fig. 1) the invention as claimed: said invention comprising, inter alia, a polarizing element, as well as, implicitly, a method of polarizing light--including wherein said polarizer element (1) has a polarization axis (inherent), wherein said polarizer element preferentially transmits light having a polarization that is parallel to said polarization axis (implicit); and a separate polarization rotator element (5) and configured and arranged to rotate the polarization of at least a portion of the light that is transmitted by the polarizer element by an angle of at least 5 degrees (col. 5, 11. 5-10); wherein said polarizer element is a first polarizer element, said invention further comprising a second polarizer element (3) having a

Art Unit: 2872

polarization axis that differs from the polarization axis of the first polarizer element by at least 5 degrees (col. 6, 11. 23-27) and wherein said polarization rotator element is disposed between said first and second polarizer elements (see Fig. 1)<sup>4</sup> wherein said polarization r' rotator element is configured and arranged to rotate the polarization of at least a portion of the light transmitted by the first polarizer element to within 5 degrees of the polarization axis of the second polarizer element (implicit); wherein the polarization t rotator element further comprises a light absorbing material different from said liquid crystal material (e.g., rotator 5 is not a liquid crystal material) and is configured and arranged to rotate the polarization of at least a portion of the light transmitted by the first polarizer element to the polarization axis of the second polarizer element (again, inherent); further comprising an alignment layer disposed between the polarizer element and the polarization rotator element (col. 1, 11. 26-32), alignment layers comprising polymeric material that has been photo aligned being well-known in the art; either surface of the polarizer element facilitates (by orientation alone) alignment of said polarization rotator element--

EXCEPT FOR an explicit teaching wherein said polarizer element and the separate polarization rotation element are integrated to form a single 51m. Bailey, however, discloses an apparatus and, by straight-forward extension of same, a method of polarizing light in which polarizer element (3) and a separate polarization rotation element (4) are integrated to form a single 51m. See; e.g., Figs. 1-3. (N.B. Bailey has been inserted solely for its teaching of a polarizer element and a separate polarization rotation element being integrated to form a single film (cf Fig. 2 of the instant invention and Figs. 1-3 of Bailey), the recited order of these elements having already been satisfied by the Shingaki et al. primary reference.) It would have been obvious to one having ordinary skill in the art at the time the invention made to have modified the apparatus and

Art Unit: 2872

implicit method teachings of Shingaki et al. such that said apparatus and method be constituted in the form of a film, as motivated by the explicit teachings of same provided by Bailey, for at least the purpose of realizing said apparatus in a more compact volume than would be the possible if said elements comprising said apparatus and constituting said method were disposed separately with respect to one another. in addition, integrating said polarizer element and said separate polarization rotation element taught by Shingaki et al-to form a single film would have been obvious to one having ordinary skill in the art at the time the invention was made, for at least the purpose of realizing said apparatus in a more compact volume than would be the possible if said elements comprising said apparatus and constituting said method were disposed separately with respect to one another, because it has been held that forming in one piece an article that has formerly been formed in two or more pieces and put together involves only routine skill in the art. Howard v. Detroit Stove Works, 150 U.S. 164 (1893).

Claims 16 & 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shingaki et al. (EP 0487047 A2) in view of Bailey (2,285,792).

The combination discloses the invention as claimed EXCEPT FOR explicit teachings wherein: the polarization rotator element rotates the polarization of the portion of the light that is transmitted by the polarizer element by an angle in the range of 40 to 50 degrees; or by an angle in the range of 85 to 95 degrees. Rotation of polarization of light by angles in these ranges, however, is disclosed in the prior art. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the invention such that its polarization rotator element rotate the polarization of the portion of the light that is transmitted

Art Unit: 2872

by the polarizer element by an angle in the range of 40 to 50 degrees or 85 to 95 degrees, such teaching being well-known in the optical art, for at least the purpose of optimizing control properties of light or other characteristics associated with said invention, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. 5.

Claims 5 & 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shingaki et al. (EP 0487047 A2) in view of Bailey (2,285,792), as applied above. With respect to, inter alia, claim 1, and further in view of Hansen et al. (5,986,730).

The combination discloses the claimed invention as set forth above EXCEPT FOR explicit teachings wherein: said first polarizer element comprises a reflective polarizer and the second absorbing polarizer; wherein said polarizer element of claim 1 comprises either a reflective polarizer as recited in claim 13), an absorbing polarizer (as recited in claim 14), or a reflective polarizer and an absorbing polarizer (as recited in claim 15). Applicants are hereby apprised that criticality has not been associated with any one of these teachings with respect to the others (i.e., said polarizer element comprising a reflective polarizer vs. its comprising an absorbing polarizer vs. its comprising a reflective polarizer and an absorbing polarizer (emphasis added)). Hansen et al., however, disclose an absorptive polarizer as one example of a polarizing means and, further, provide an explicit teaching wherein (any means for polarizing the light so that light having mostly one polarization orientation is passed may be used. (col. 7, 11). 23. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the invention of the combination such that

Art Unit: 2872

its polarizers (first or first and second) variously comprise, individually or in combination, reflective and absorptive polarizers, as taught by Hansen et al, for at least the purpose of achieving a desired polarization state for light traversing the invention.

### *Response to Arguments*

Applicant's arguments filed February 10, 2005 have been fully considered but they are not persuasive.

On pages 3 and 4 of Amendment, applicant argues that the prior art of record fails to teach or suggest a polarizer integral with a polarization rotation element. Bailey teaches a polarizer coupled to a polarization rotation element (Figs. 1-3) and states that the polarization is rotated (page 3 col. 1 lines 60-65) when light passes through the combination of optical elements.

On page 4 of Amendment, applicant argues that the combination of Shingaki and Bailey would render the Shingaki invention inoperable because the Shingaki invention required the polarization rotation element to physically rotate. Shingaki teaches that the polarization rotation element must physically rotate about the optical axis (col. 2 line 53 – col. 3 line 7). Making the polarizer and polarization rotation element of Shingaki integral as suggested by Bailey would not interfere with the physical rotation of the polarization rotation element about the optical axis, therefore the Shingaki reference would still be operable following the combination of the teachings of Shingaki and Bailey.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua L. Pritchett whose telephone number is 571-272-2318. The examiner can normally be reached on Monday - Friday 7:00 - 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A. Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



Art Unit: 2872

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JLP *JP*



**DREW A. DUNN**  
**SUPERVISORY PATENT EXAMINER**